CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 94-036

NPDES NO. CA0029122

WASTE DISCHARGE REQUIREMENTS FOR:

GWF POWER SYSTEMS COMPANY, INC.,
NICHOLS ROAD (SITE V) POWER PLANT
PITTSBURG, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay, (hereinafter called the Board) finds that:

1. GWF Power Systems Company, Inc., Nichols Road (Site V) Power Plant, hereinafter referred to as the Discharger, submitted an NPDES Permit application (Report of Waste Discharge) dated February 11, 1993 for reissuance of NPDES Permit No. CA0029122.

2. The discharge of wastewater from the Pittsburg Power Plant (Site V) is currently regulated by Waste Discharge Requirements, Order No. 88-132 , adopted by the Board on August 17, 1988. This Order expired on August 17, 1993, and the Executive Officer extended it by letter dated May 21, 1993.

3. The Discharger generates 18.2 megawatts of electric power from the burning of petroleum coke, a by-product of local crude oil refining operations, supplemented by coal and oil. All wastewater generated at the facility, with the exception of stormwater, discharges through a single deepwater outfall to Suisun Bay.

4. The U.S. Environmental Protection Agency (EPA) and the Board have classified this discharge as a minor discharge.

5. The following discharges, as described below, were included in the submitted Report of Waste Discharge and recent self-monitoring reports:

   Waste 001 averages 92,000 gallons per day (gpd), and consists of steam condensate, demineralizer wastewater, cooling tower blowdown, and equipment washdown waters. The Discharger neutralizes its demineralizer wastewater, and uses a bromine based treatment for microorganism control. Waste 001 discharges through a deepwater outfall to Suisun Bay (Latitude: 38°03'15", Longitude: 121°59'15").

6. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The Board amended its Basin Plan on September

16, 1992, and the State Board approved it on April 27, 1993, with approval from the Office of Administrative Law pending. The Basin Plan identifies beneficial uses and water quality objectives for surface waters in the region, as well as effluent limitations and discharge prohibitions intended to protect beneficial uses.

7. The beneficial uses of Suisun Bay and contiguous waters include:

   a. Water Contact recreation
   b. Non-contact water recreation
   c. Navigation
   d. Ocean commercial and sport fishing
   e. Wildlife habitat
   f. Estuarine habitat
   g. Fish spawning and migration
   h. Industrial service supply
   i. Preservation of rare and endangered species

8. The State Board adopted a revised Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan) on September 18, 1975. The temperature limitations contained in this Order for the cooling tower discharge are in accordance with the Thermal Plan. Because of the location and nature of this discharge, Waste 001 is classified as a thermal waste.

9. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21110) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

10. Effluent limitations and toxic effluent standards established pursuant to Sections 208(b), 301, 304, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharge.

11. Effluent limitation guidelines have been promulgated by the U.S. Environmental Protection Agency for the Steam Electric Power Generating Point Source Category, 40 CFR Part 423.15, New Source Performance Standards. Effluent Guidelines for this Order have been based on these guidelines, the Basin Plan, State plans and policies, current plant performance, and best professional judgement.

12. Under 40 CFR 122.44, "Establishing Limitations, Standards, and Other Permit Conditions," NPDES permits should also include toxic pollutant limitations if the Discharger uses or manufactures a toxic pollutant as an intermediate or final product or byproduct. This permit may be modified prior to the expiration date, pursuant to 40 CFR 122.62 and 124.5, to include effluent limitations for toxic constituents determined to be present in significant amounts in the discharge through a more comprehensive

monitoring program included as a part of this Order.

13. The Board notified the Discharger and interested agencies and persons of its intent to reissue waste discharge requirements for the discharge and provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

14. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the Discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Federal Water Pollution Control Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. The discharge of Waste 001 containing constituents in excess of the following limits is prohibited:

Constituent	Units	Monthly Average	Daily Maximum
Total Suspended Solids (TSS)	lbs/day	23.02	34.54
	kg/day	10.47	15.70
	mg/l	30	45
Oil & Grease	lbs/day	7.68	15.35
	kg/day	3.49	6.98
	mg/l	10	20
Settleable Matter	ml/l-hr	0.1	0.2

2. The discharge of Waste 001 containing constituents in excess of the following limits is prohibited:

Chemical Constituent	Units	Daily Maximum
Arsenic	ug/l	200
Cadmium	ug/l	30

Chemical Constituent	Units	Daily Maximum
Chromium VI[1]	ug/l	110
Copper[2,3]	ug/l	37
Lead	ug/l	53
Mercury	ug/l	1
Nickel	ug/l	65
Silver	ug/l	23
Zinc	ug/l	840

[1] Dischargers may, at their option, meet this limitation as total chromium.

[2] Compliance with the copper concentration limitation shall be demonstrated by January 1, 1996 pursuant to Provision D.3. The Discharger shall meet either 60 ug/l or the weighted average concentration of copper in the intake waters, whichever is greater, until that time.

[3] Concentrations in Intake waters and Waste 001 shall be monitored on the same day.

3. Waste 001 shall not have a pH less than 6.0 nor greater than 9.0.

4. The maximum temperature of Waste 001 shall not exceed 86°F, and shall not exceed the temperature of Suisun Bay by more than 20°F.

5. Waste 001 shall meet the following acute toxicity limitation:

   The survival of three-spine stickleback and rainbow trout (or fathead minnow) in a 96-hour parallel flow-through bioassay of the effluent as discharged shall be an 11-sample median value of not less than 90 percent survival[1], and a 90 percentile value of not less than 70 percent survival.

   [1] If one or more of the past ten samples is less than 70 percent survival, then survival of less than 70 percent on the next, eleventh, sample represents an effluent limit violation.

B. Receiving Water Limitations

1. The discharge of wastes shall not cause the following conditions to exist in waters of the State at any place at levels that cause nuisance or adversely affect beneficial uses:

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

   b. Bottom deposits or aquatic growths;

   c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

   d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

   e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of wastes shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

   a. Dissolved oxygen: 7.0 mg/l minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation.

   b. Dissolved sulfide: 0.1 mg/l maximum.

   c. pH: Variation from natural ambient pH by more than 0.5 pH units.

   d. Un-ionized ammonia (as N): 0.025 mg/l Annual Median;
   0.16 mg/l Maximum at any time.

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are

promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

4. The discharge shall not cause a surface water temperature rise greater than 4°F above the natural temperature of Suisun Bay at any time or place.

C. Discharge Prohibitions

1. The discharge of Waste 001 at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1 is prohibited.

2. The discharge of all conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, is prohibited.

D. Provisions

1. The Discharger shall comply with the limitations, prohibitions, and other provisions of this Order immediately upon its adoption by the Board.

2. The Discharger shall demonstrate no net increase in copper loadings to Suisun Bay. Intake copper loadings shall be monitored on a monthly basis, and on the same day as loadings from Waste 001.

3. Compliance with the copper concentration specified in A.2. shall be demonstrated in accordance to the following time schedule:

	Task	Deadline
a.	Submit a proposal to the Regional Board presenting source control and treatment options which may reduce copper concentrations in Waste 001.	July 1, 1994
b.	Submit quarterly progress reports which summarize copper concentrations in both the intake waters and Waste 001, discharge blowdown rates, and problems encountered and foreseen which may affect compliance with A.2.	Each calendar quarter on the 15th day of the following quarter

	Task	Deadline
c.	Achieve full compliance with either the 37 ug/l limitation or the weighted average concentration of copper in the intake waters, whichever is greater.	January 1, 1996

4. The Discharger shall review and update annually its contingency plan as required by Board Resolution No. 74-10. Discharging pollutants in violation of this Order where the Discharger failed to develop and/or implement a current contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

5. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act, or amendments thereto, and shall take effect at the end of ten days from the date of hearing provided the Regional Administrator, EPA, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

6. The Discharger shall comply with the attached self-monitoring program as adopted by the Board, and as may be amended by the Board pursuant to EPA regulations 40 CFR 122.62, 122.63, and 124.5.

7. All applications, reports, or information submitted to the Board shall be signed and certified pursuant to EPA regulations 40 CFR 122.41(k).

8. Pursuant to EPA regulations 40 CFR 122.44, 122.62, and 124.5, this permit may be modified prior to the expiration date to include effluent limitations for toxic constituents determined to be present in significant amounts in the discharge through a more comprehensive monitoring program included as a part of this Order.

9. Pursuant to EPA regulations 40 CFR 122.42(a), the Discharger must notify the Board as soon as it knows or has reason to believe (1) that they have begun or expect to begin, use or manufacture of a pollutant not reported in the permit application, or (2) a discharge of a toxic pollutant not limited by this permit has occurred, or will occur, in concentrations that exceed the specified limits included in 40 CFR 122.42(a).

10. This Order includes all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated August 1993.

11. The requirements prescribed by this Order supersede those prescribed by Order No. 88-132 adopted on August 17, 1988. Order No. 88-132 is hereby rescinded.

12. This Order expires on March 16, 1999. The Discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

I, Steven R. Ritchie, Executive Officer do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on March 16, 1994.

STEVEN R. RITCHIE
Executive Officer

Attachments:
Facility Map
Appendix A - Definition of Terms
Standard Provisions & Reporting Requirements, August 1993
Self-Monitoring Program
General Industrial Stormwater Permit - Section A

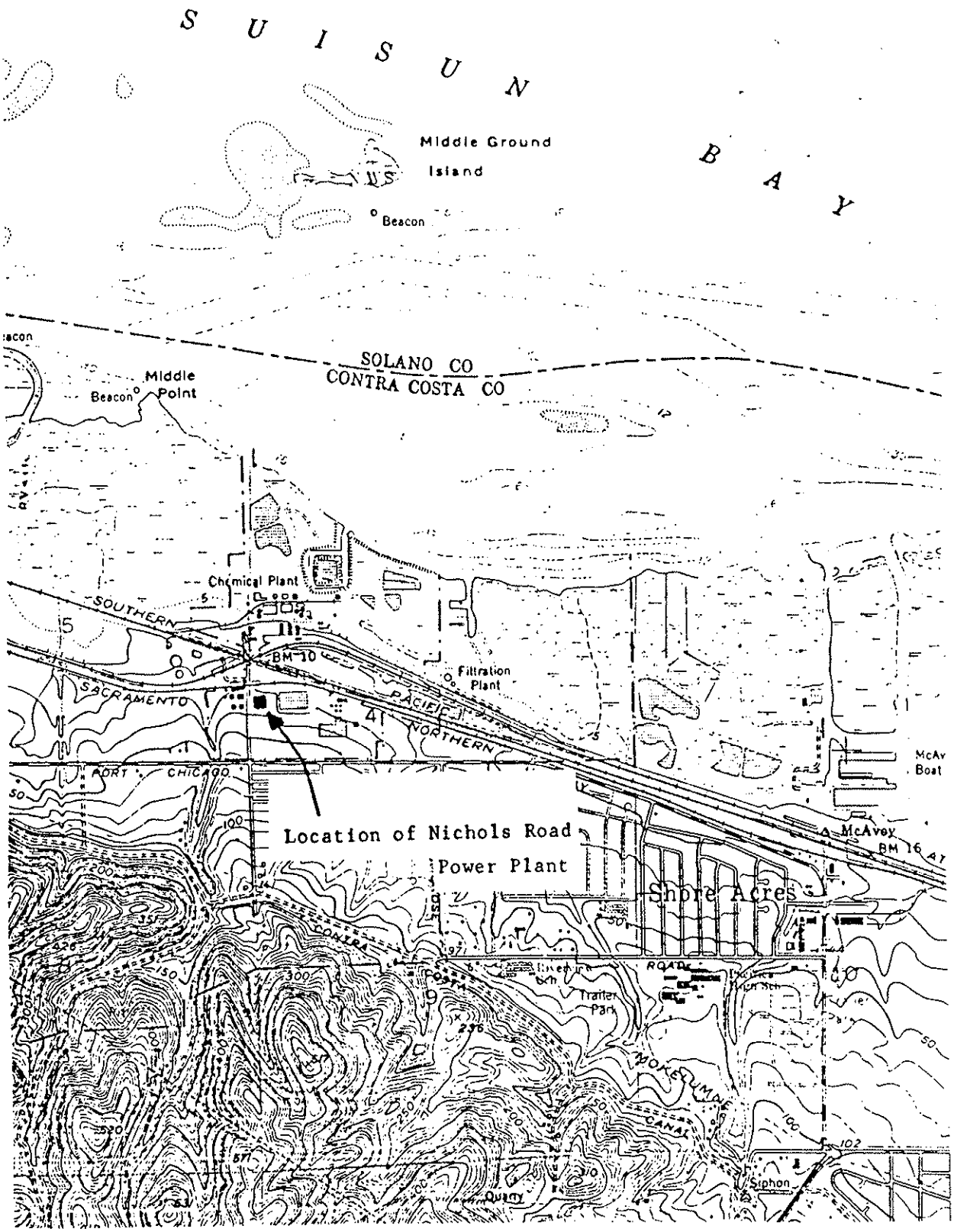

FIGURE 2: Site location on USGS topographic map.

ATTACHMENT A

DEFINITION OF TERMS[1] FOR CHEMICAL CONSTITUENTS

CHLORDANE shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

DDT shall mean the sum of the p,p^1 and o,p^1 isomers of DDT, DDD (TDE), and DDE.

ENDOSULFAN shall mean the sum of endosulfan-alpha and -beta and endosulfan sulfate.

ENDRIN shall mean the sum of endrin and endrin aldehyde.

HALOMETHANES shall mean the sum of bromoform, bromomethane (methyl bromide), chloromethane (methyl chloride), chlorodibromomethane, and dichlorobromomethane.

PAHs (polynuclear aromatic hydrocarbons) shall mean the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene,benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene, and pyrene.

PCBs (polychlorinated biphenyls) shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.

TCDD Equivalents shall mean the sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity equivalence factors, as shown in the table below.

Isomer Group	Toxicity Equivalence Factor
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8-tetra CDF	0.1
1,2,3,7,8-penta CDF	0.05
2,3,4,7,8-penta CDF	0.5
2,3,7,8-hexa CDFs	0.1
2,3,7,8-hepta CDFs	0.01
octa CDF	0.001

[1] Source: Enclosed Bays and Estuaries Plan of California, April 1991

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

GWF POWER SYSTEMS, INC.
NICHOLS ROAD (SITE V) POWER PLANT
PITTSBURG, CONTRA COSTA COUNTY

NPDES NO. CA0029122

ORDER NO. 94-036

CONSISTS OF

PART A (dated August 1993)

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. EFFLUENT

Station	Description
E-001	At any point in the outfall from the plant facilities between the point of discharge to Suisun Bay and the point at which all wastes tributary to that outfall are present.
E-002	At any point in the 002 waste stream from the Nichols Road drainage ditch such that the sample is representative of the stormwater effluent.

B. RECEIVING WATERS

Station	Description
C-1	300 feet upstream from the point of discharge, equidistant from the shoreline with that of the diffuser.
C-2	300 feet downstream from the point of discharge, equidistant from the shoreline with that of the diffuser.

II. MISCELLANEOUS REPORTING

A. In addition to the maximum, minimum, and average effluent pH values, the following information about effluent pH violations shall be reported each month (report separately for over and under the pH limitations):

a. Percent of time effluent pH was outside the limitations.

b. Number of events when pH was outside the limitations.

c. Total (cumulative) hours and minutes that pH was outside the limitations.

d. Duration of the longest continuous period of such violation(s).

Note that strip charts of the effluent pH record must be retained with other

laboratory records, and made available for inspection by Board staff.

B. The Discharger shall conduct visual observations of the stormwater discharge locations on at least one storm event per month that produces a significant stormwater discharge to observe the presence of floating and suspended materials, oil and grease discolorations, turbidity, and odor. "significant stormwater discharge" is a continuous discharge of stormwater for a minimum of one hour, or an intermittent discharge of stormwater for a minimum of three hours in a 12-hour period.

C. The Discharger shall retain and submit (when requested) the following information concerning the monitoring program for organic and metallic pollutants.

a. Description of sample stations, times, and procedures.

b. Description of sample containers, storage, and holding time prior to analysis.

c. Quality assurance procedures together with any test results for replicate samples, sample blanks, and any quality assurance tests, and the recovery percentages for the internal and surrogate standards.

D. The Discharger shall submit in the monthly self-monitoring report the metallic & organic test results together with the detection limits (including unidentified peaks). All unidentified (non-Priority Pollutants) peaks detected in the EPA 624 and 625 test methods shall be identified and semi-quantified.

Hydrocarbons detected at $<$ 10 ug/l based on the nearest internal standard may be appropriately grouped and identified together as aliphatic hydrocarbons, aromatic hydrocarbons, and unsaturated hydrocarbons. All other hydrocarbons detected at $>$ 10 ug/l based on the nearest internal standard shall be identified and semi-quantified.

E. The Discharger shall submit a sketch showing the locations of all ponds, treatment facilities, and points of waste discharge. This shall be updated by the discharger as changes occur.

III. SCHEDULE OF SAMPLING AND ANALYSIS

A. The schedule of sampling and analysis shall be that given in Table 1 (Attached).

B. Sample collection, storage, and analyses shall be performed according to the latest 40 CFR Part 136 or other methods approved and specified by the Executive Officer.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 94-036.

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.

STEVEN R. RITCHIE
Executive Officer

Effective Date 3/16/94

Attachments:
Table 1

TABLE 1

SCHEDULE OF SAMPLING, MEASUREMENT, AND ANALYSIS

Station	Constituent	Unit	Type of Sample	Frequency of Analysis
E-001	Flow Rate	GPD	Continuous	Continuous
	Settleable Matter	ml/l/hr	Grab (3)	Weekly
	TSS	mg/l kg/day	Composite	Weekly
	Oil & Grease	mg/l kg/day	Grab (1) (3)	Weekly
	Fish Toxicity	Survival	Flow through	Twice/Month(9)
	pH (2)	Standard Units	Continuous	Continuous
	Temperature	°F	Continuous	Continuous
	TDS	mg/l	Grab	Weekly
	BOD	mg/l	Composite	Monthly
	TOC	mg/l	Composite	Monthly
	COD	mg/l	Composite	Monthly
	Un-ionized Ammonia (as N)	mg/l	Composite	Monthly
	Arsenic	ug/l kg/day	Composite	Twice/Month(10)
	Cadmium	ug/l kg/day	Composite	Twice/Month
	Chromium (total)	"	"	"
	Hexavalent Chromium	"	"	"
	Copper	"	"	Twice/Month
	Cyanide	"	"	Twice/Year
	Lead	"	"	Twice/Month
	Mercury	"	"	Twice/Month
	Nickel	"	"	Twice/Month
	Silver	"	"	Twice/Month
	Selenium (4)	"	"	Twice/Year
	Zinc	"	"	Weekly
	PAH's (5)	"	"	Once/year
	EPA 608 (6)	"	"	Once/year
	EPA 624 (7)	"	Grab	Once/year
	EPA 625 (8)	"	Grab	Once/year

Station	Constituent	Unit	Type of Sample	Frequency of Analysis
E-002	Visible Oil		Observation	Each Occurrence (11)
	Visible Color		Observation	Each Occurrence (11)
All C Stations	pH	Standard Units	Grab (12)	Twice/year
	D.O.	mg/l % Satn	Grab (12)	Twice/year
	Temperature	°F	Grab (12)	Twice/year
	Sulfides	mg/l	Grab (12)	Twice/year
	Un-ionized Ammonia (as N)	mg/l	Grab (12)	Twice/year
	Salinity	ppt	Grab (12)	Twice/year

Footnotes for Table 1:

1. Oil and grease sampling shall consist of 3 grab samples taken at 2 hour intervals during the sampling day, with each grab being collected in a glass container. The entire volume of each sample shall be composited prior to analysis. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite wastewater sample for extraction and analysis.

2. Daily minimum and maximum shall be reported.

3. Grab samples shall be collected coincident with samples collected for the analysis of the regulated parameters. In addition, the grab samples must be collected in glass containers.

4. Selenium may be analyzed by the atomic absorption, graphite furnace procedure (EPA Method No. 270.2/ Standard Method No. 3113B) or the atomic absorption, gaseous hydride procedure (EPA Method No. 270.3/ Standard Method No. 3114B). Alternative methods of analysis must be approved by the Executive Officer.

5. Polynuclear aromatic hydrocarbons PAHs shall be analyzed using EPA Method 610 or 625 of the October 1984 Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, 40 CFR Part 136. Alternative methods of analysis must be approved by the Executive Officer.

6. Organochlorine and other Organohalide Pesticides and Polychlorinated Biphenyl Toxic Pollutants shall be analyzed using EPA Method 608 of the October 1984 Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, 40 CFR Part 136. Alternative methods of analysis must be approved by the Executive Officer.

7. Volatile Organic Toxic Pollutants shall be analyzed using EPA Method 624 of the October 1984 Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, 40 CFR Part 136. Alternative methods of analysis must be approved by the Executive Officer.

8. Acid and Base/Neutral Extractable Organic Toxic Pollutants shall be analyzed using EPA Method 625 of the October 1984 Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, 40 CFR Part 136. Alternative methods of analysis must be approved by the Executive Officer.

9. Three-spine stickleback and rainbow trout (or fathead minnow) shall be tested pursuant to Effluent Limitation A.5.

10. Arsenic may be analyzed by the atomic absorption, graphite furnace procedure (EPA Method No. 206.2/ Standard Method No. 3113B) or the atomic absorption, gaseous hydride procedure (EPA Method No. 206.3/ Standard Method No. 3114B). Alternative methods of analysis must be approved by the Executive Officer.

11. Each Occurrence shall refer to "significant stormwater discharges" on at least one storm event per month. These are continuous discharges of stormwater for a minimum of one hour, or an intermittent discharge of stormwater for a minimum of three hours in a 12-hour period.

12. Receiving water samples shall be taken at the following three depths: two feet below the surface, the midpoint between the surface and the bottom, and two feet above the bottom.